

# HALLIBURTON

iCem<sup>®</sup> Service

## **BISON OIL & GAS II LLC-EBUS**

Ft. Lupton District, Colorado

**Ross 8-60 18-7-2 Production**

Job Date: Tuesday, June 14, 2022

Sincerely,

**Meghan Van Zyl**

## Legal Notice

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### Disclaimer:

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Table of Contents

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Cementing Job Summary ..... 4  
    Executive Summary ..... 4  
Real-Time Job Summary ..... 7  
    Job Event Log ..... 7  
Attachments..... 10  
    Real Time iCem Job Chart ..... 10

## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Ross 8-60 18-7-2** cement **Production** casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

**Approximately 70 bbls of cement were returned to surface.**

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

**Halliburton Fort Lupton**

<b>Sold To #:</b> 324725		<b>Ship To #:</b> 324725		<b>Quote #:</b>		<b>Sales Order #:</b> 0907922000	
<b>Customer:</b> BISON OIL & GAS II LLC-EBUS				<b>Customer Rep:</b> Jose Torres			
<b>Well Name:</b> Ross 8-60			<b>Well #:</b> 18-7-2			<b>API/UWI #:</b>	
<b>Field:</b>		<b>City (SAP):</b> keota		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO	
<b>Legal Description:</b>							
<b>Contractor:</b> ENSIGN DRLG				<b>Rig/Platform Name/Num:</b> ENSIGN 140			
<b>Job BOM:</b> 7523 7523							
<b>Well Type:</b> OIL & GAS WELL							
<b>Sales Person:</b> HALAMERICA\HX41066				<b>Srvc Supervisor:</b> Michael Loughran/Cody Haley			

**Job**

<b>Formation Name</b>							
<b>Formation Depth (MD)</b>	<b>Top</b>				<b>Bottom</b>		
<b>Form Type</b>				<b>BHST</b>			
<b>Job depth MD</b>	15705.26ft			<b>Job Depth TVD</b>			
<b>Water Depth</b>				<b>Wk Ht Above Floor</b>			
<b>Perforation Depth (MD)</b>	<b>From</b>				<b>To</b>		

**Well Data**

Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing		9.625	8.921	36			0	1964	0	1964
Casing		5.5	4.892	17			0	15703	0	6496
Open Hole Section			8.5				1964	15703	1964	6496

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5				Top Plug	5.5	1	CITADEL
Float Shoe	5.5			15705.26	Bottom Plug	5.5	1	CITADEL
Float Collar	5.5			15697.8	SSR plug set	5.5		
Insert Float	5.5				Plug Container	5.5	1	HES
Stage Tool	5.5				Centralizers	5.5		

**Fluid Data**

<b>Stage/Plug #: 1</b>									
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Tuned Prime Cement Spacer	TUNED PRIME CEMENT SPACER SYS	50	bbl	11.5	3.74	1775	6	

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
2	ElastiCem	SBM CEM ELASTICEM™ SYS	565	sack	13	1.66	4689	8	8.3	
3	IsoBond	SBM CEM FDP-C1371 SYS	550	sack	13	1.55	3971	8	7.22	
4	ElastiCem	SBM CEM ELASTICEM™ SYS	1375	sack	13.2	1.59	10670	8	7.76	
5	MMCR Displacement	MMCR Displacement	20	bbl	8.33	0	840	9.25		
6	Displacement	Displacement	344.2	bbl	8.33		14448			
<b>Cement Left In Pipe</b>										
<b>Amount</b>		7.46 ft			<b>Reason</b>			<b>Shoe Joint</b>		
Mix Water: pH 7		Mix Water Chloride: Less than 200 ppm			Mix Water Temperature: °F °C					
Cement Temperature: 82 °F		Plug Displaced by: 8.33 lb/gal			Disp. Temperature: 82 °F					
Plug Bumped? Yes		Bump Pressure: 2700 psi			Floats Held? Yes					
Cement Returns: 70 bbls		Returns Density: 13 ppg			Returns Temperature:					
<b>Comment</b> 906bbls mix water total used.										

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Seq No.	Activity	Graph Label	Date	Time	Dwnhole Density (ppg)	Cmb Stg Total (bbl)	Pump B Pressure (psi)	Cmb Pump Rate (bbl/min)	Comments
1	Call Out	Call Out	6/13/2022	09:30:00					CALLOUT 0930 HOURS ON 6/13/2022. REQUESTED ON LOCATION AT 1530 HOURS ON 6/13/2022
2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/13/2022	12:00:00					DISCUSS ROUTE AND JSA SAFE DRIVING
3	Crew Leave Yard	Crew Leave Yard	6/13/2022	12:30:00					CREW LEAVES YARD
4	Arrive At Loc	Arrive At Loc	6/13/2022	14:30:00					MEET WITH CUSTOMER, TD 15703', 5.5" 17# P-110 CASING 15703', F/C 15697.8', 8.5" HOLE, SURFACE CASING 36# J-55 1964', TVD 6496', OBM 9.5 PPG, WATER TEST 82 DEGREES, PH 7, CHLORIDES LESS 200 PPM, MAX PRESSURE 3000 PSI
5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	6/13/2022	14:45:00					JSA SAFE RIG UP
6	Rig-Up Equipment	Rig-Up Equipment	6/13/2022	14:50:00					RIG-UP ALL HES EQUIPMENT AND IRON TO BUFFER ZONE
7	Safety Meeting	Safety Meeting	6/13/2022	21:00:00	8.33	0.00	2.86	0.00	PRE JOB SAFETY MEETING. DISCUSS HAZARDS OF JOB, HES EQUIPMENT AND PRESSURE. DISCUSS JOB PLAN. RIG CIRCULATES BOTTOMS UP. 10 BPM/920 PSI
8	Start Job	Start Job	6/13/2022	21:16:31	8.35	0.00	1.40	0.00	BEGIN RECORDING DATA

9	Drop Bottom Plug	Drop Bottom Plug	6/13/2022	21:16:42	8.35	0.00	1.02	0.00	CITADEL BOTTOM PLUG VERIFIED BY KENNY
10	Test Lines	Test Lines	6/13/2022	21:19:29	8.23	3.01	116.67	0.00	TEST HES LINES TO 4700 PSI
11	Pump Spacer 1	Pump Spacer 1	6/13/2022	21:24:04	8.24	0.00	50.97	0.00	50 BBLS TUNED PRIME SPACER. 11.5 PPG, 3.74 YIELD, 23.65 GAL/SACK, MIX D-AIR ON FLY
12	Pump Cap Cement	Pump Cap Cement	6/13/2022	21:39:57	11.83	0.05	168.43	3.17	565 SACKS SBM CEM CAP CEMENT. 167.04 BBLS. 13 PPG, 1.66 YIELD, 8.3 GAL/SACK. TOCC=0"
13	Pump Lead Cement	Pump Lead Cement	6/13/2022	22:03:24	12.76	0.07	732.19	8.47	550 SACKS ISO BOND SBM CEM FDP-C1371 SYS LEAD CEMENT. 151.83 BBLS. 13 PPG, 1.55 YIELD, 7.22 GAL/SACK. ESTIMATED TOLC=2444" PRE JOB CALCS.
14	Pump Tail Cement	Pump Tail Cement	6/13/2022	22:22:39	13.01	0.10	893.80	6.22	1375 SACKS SBM CEM ELASTICEM. 389.37 BBLS. 13.2 PPG, 1.59 YIELD, 7.76 GAL/SACK. TOTC=6166" ESTIMATED PRE JOB CALCS.
15	Shutdown	Shutdown	6/13/2022	23:17:59	14.27	427.05	133.96	0.00	SHUTDOWN
16	Clean Lines	Clean Lines	6/13/2022	23:21:10	13.99	0.00	5.56	0.00	CLEAN PUMPS AND LINES. USED 50 LBS. SUGAR IN WASH UP
17	Shutdown	Shutdown	6/13/2022	23:28:47	8.39	18.80	20.73	0.00	SHUTDOWN
18	Drop Top Plug	Drop Top Plug	6/13/2022	23:30:18	8.38	18.80	5.17	0.00	CITADEL TOP PLUG VERIFIED BY KENNY
19	Pump Displacement	Pump Displacement	6/13/2022	23:30:21	8.38	0.00	5.18	0.00	364.19 BBLS. FRESH WATER DISPLACEMENT. 1ST 20 BBLS. HAS 10 GALLONS MICRO MATRIX CEMENT RETARDER.
20	Bump Plug	Bump Plug	6/14/2022	00:14:00	8.55	362.67	2183.17	4.15	FCP 2180 PSI/4BPM, BUMB PRESSURE 2700 PSI
21	Check Floats	Check Floats	6/14/2022	00:16:37	8.52	364.20	2318.94	0.00	FLOATS HOLD 4 BBLS BACK TO PUMP TRUCK.
22	End Job	End Job	6/14/2022	00:17:40	8.40	0.00	10.92	0.00	STOP RECORDING DATA, FLUSHED RIG STACK WITH 23 BBLS, AND 100 LBS OF SUGAR

23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	6/14/2022	00:30:00	JSA SAFE RIG-DOWN
24	Rig-Down Equipment	Rig-Down Equipment	6/14/2022	00:35:00	RIG-DOWN ALL HES EQUIPMENT
25	Rig-Down Completed	Rig-Down Completed	6/14/2022	01:30:00	RIG DOWN COMPLETED
26	Crew Leave Location	Crew Leave Location	6/14/2022	02:00:00	CREW LEAVES LOCATION

3.0 Attachments

3.1 Real Time iCem Job Chart

